

REMARKS

Claims 23-68 are currently pending and subject to examination. Claims 23-31, 38-41, and 43-55 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Claims 23-68 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,957,237 issued to Traversat, et al. ("Traversat"). No amendments to the claims are made by this Response.

CLAIM REJECTIONS-- 35 U.S.C. § 101

Claims 23-31, 38-41, and 43-55 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. This rejection is respectfully traversed, as follows.

Applicants note that "transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces 'a useful, concrete and tangible result' -- a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades." *State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601.

Regarding claim 23, the claimed invention also involves transformation of data by a machine through a series of calculations. Furthermore, claim 23 contains the limitation "executing the document operation." The document operation may be, for example, a read operation, a delete operation, an insert operation, an update operation, a create operation, etc. The method of claim 23 thus produces a useful, concrete, and tangible result, namely, a document on which a document operation has been performed

Claim 43 recites similar limitations to claim 23 and is patentable for similar reasons to those discussed above with reference to claim 23. Claims 24-31 and 38-41 are dependent on independent

claim 23 and claims 44-55 are dependent on independent claim 43. These dependent claims are therefore patentable for at least those reasons discussed above with reference to the independent claims.

CLAIM REJECTIONS-- 35 U.S.C. § 102

Claims 23-68 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Traversat. This rejection is respectfully traversed, as follows.

Regarding claim 23, the claim is directed to a method of handling document operation requests. The method includes receiving a document operation request, the document operation requiring one or more collection elements of the document to be in memory, and identifying at least one of the one or more required collection elements for processing. The method further includes determining whether the at least one identified collection element is within a collection partition in the memory, loading the at least one identified collection element into memory when the at least one identified collection element is not within a collection partition in the memory, and executing the document operation.

In contrast, Traversat teaches a database store method and system for a virtual persistent heap. An Application Program Interface (API) provides a mechanism to cache portions of the virtual heap into an in-memory heap for use by an application. The virtual heap may be stored in a persistent store that may include one or more virtual persistent heaps, with one virtual persistent heap for each application running in the virtual machine. Each virtual persistent heap may be divided into cache lines. See Abstract.

In Traversat, applications on a system each have an in-memory heap serving as a “physical” memory that is being used for the current execution of the application, a virtual heap that may

include the entire heap of the application including at least a portion of the runtime environment, and a persistent heap or store where the virtual heap can be checkpointed. The virtual heap and the persistent heap may be combined. A heap may include code and data for use by the application. In object-oriented programming languages such as Java, at least some of the code and data in the heap for the application may be encapsulated in objects. See Traversat, col. 3, line 53 – col. 4, line 2.

Traversat teaches only systems and methods for caching heaps including code and data for use by an application. Traversat does not teach systems and methods for handling document operation requests. In particular, Applicants note that receiving a reference to a cache line in a virtual heap address space is not analogous to receiving a document operation request. Applicants further note that the objects in Traversat, which are described as “instances of the class’s methods or procedures (code) and/or data related to the object” (Traversat, col. 4, lines 4-6) are not analogous to the collection elements of the present invention, which are described as elements or items in a document, such as an XML document (Specification, paragraph [0002]). Thus, Traversat does not teach or suggest either document operation requests or collection elements.

As Traversat does not teach or suggest either document operations or collection elements, Traversat does not teach or suggest the limitations of “receiving a document operation request, the document operation requiring one or more collection elements of the document to be in memory,” “identifying at least one of the one or more required collection elements for processing,” “determining whether the at least one identified collection element is within a collection partition in the memory,” “loading the at least one identified collection element into memory when the at least one identified collection element is not within a collection partition in the memory,” or “executing the document operation,” as recited in claim 23 of the present invention. As Traversat does not teach any of the limitations of claim 23, claim 23 is patentable over Traversat.

Claims 43 and 56 recite similar limitations to claim 23 and are patentable for similar reasons to those discussed above with reference to claim 23. Dependent claims 24-42, 44-55, and 57-68 are dependent on independent claims 23, 43, and 56, respectively, and are patentable for at least those reasons discussed above with reference to the independent claims.

CONCLUSION

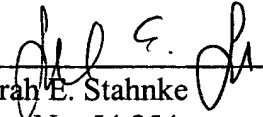
Based on the foregoing, all claims are believed allowable, and an allowance of the claims is respectfully requested. If the Examiner has any questions or comments, the Examiner is respectfully requested to contact the undersigned at the number listed below.

If the Commissioner determines that additional fees are due or that an excess fee has been paid, the Patent Office is authorized to debit or credit (respectively) Deposit Account No. **50-2518**, billing reference no. **7035722001**.

Respectfully submitted,
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By: _____


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